




**SPECIFICATION SHEET**

<b>SPECIFICATION SHEET NO.</b>	N0310- LL34LL4148S010
<b>DATE</b>	Mar. 10, 2021
<b>REVISION</b>	A0
<b>DESCRIPTION</b>	SMD Fast Switching Diodes, LL34 series, Glass Case MINI MELF Reverse Voltage 100V Max. Forward Current 200mA Max. Operating Temp. Range -65°C ~+175°C, Package in Tape/Reel, 2500pcs/Reel RoHS/RoHS III compliant
<b>CUSTOMER</b>	
<b>CUSTOMER PART NUMBER</b>	
<b>CROSS REF. PART NUMBER</b>	
<b>ORIGINAL PART NUMBER</b>	MDD LL4148
<b>PART CODE</b>	LL34LL4148S010

<b>VENDOR APPROVE</b>			
Issued/Checked/Approved			
DATE: March 10, 2021			

<b>CUSTOMER APPROVE</b>	
DATE:	

**SMD FAST SWITCHING DIODES GLASS CASE LL34 SERIES**

**MAIN FEATURE**

- Fast switching speed
- Glass Case MINI MELF
- Fast reverse recovery time
- High conductance



**APPLICATION**

- For general purpose switching applications

RFQ

Request For Quotation

**PART CODE GUIDE**

LL34	LL4148	S	010
1	2	3	4

- 1) **LL34**: SMD Fast Switching Diodes, LL34 series, Glass Case MINI MELF
- 2) **LL4148**: Type code for original part number LL4148
- 3) **S**: Package code, Tape/reel, 2500pcs/reel.
- 4) **010**: Specification code for Reverse Voltage 100V Max. Forward Current 200mA Max

**MORE ITEMS AVAILABLE**

<b>LL34LL4148S010</b>				

**SMD FAST SWITCHING DIODES GLASS CASE LL34 SERIES**

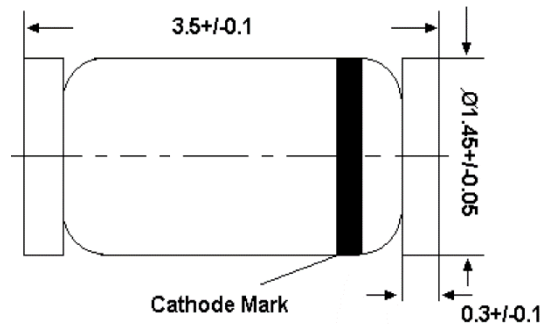
**DIMENSION (Unit: mm)**

Image for reference

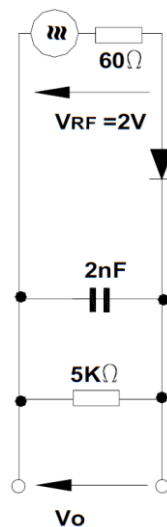


Marking: LL4148

LL-34/MINI MELF



Rectification Efficiency  
Measurement Circuit



**SMD FAST SWITCHING DIODES GLASS CASE LL34 SERIES**
**MECHANICAL DATA**

Case	Terminals	Polarity	Mounting Position	Weight per piece
JEDEC LL-34/MINI MELF molded glass case	Plated leads, Solderable per MIL-STD-750, Method 2026	Polarity symbol marking on case LL4148	Any	N/A

**ABSOLUTE MAX. RATINGS AT Ta=25 °C**

Parameter	SYMBOLS	VALUE	UNITS
		LIMIT	
Repetitive peak reverse voltage	V <sub>RM</sub>	100	Volts
Reverse Voltage	V <sub>R</sub>	75	Volts
Average Rectified Forward Current	I <sub>F(AV)</sub>	200	mA
Non-Repetitive Peak Forward Surge Current	@ t= 1.0 s	0.5	A
	@ t= 1.0 ms	1.0	
	@ t= 1.0 μs	4.0	
Power Dissipation*	P <sub>D</sub>	500	mW
Junction temperature	T <sub>J</sub>	+175	°C
Storage temperature range	T <sub>STG</sub>	-65 ~ +175	°C

\* Note: Valid provided that electrodes are kept at ambient temperature

**SMD FAST SWITCHING DIODES GLASS CASE LL34 SERIES**
**Characteristics at Ta= 25 °C**

Parameter	SYMBOLS	VALUE			UNIT	Condition
		Min.	Typ.	Max.		
<b>Forward Voltage</b>	V <sub>F</sub>			1.0	V	at I <sub>F</sub> = 10 mA
<b>Leakage Current</b>	I <sub>R</sub>			25	nA	at V <sub>R</sub> = 20 V
				5.0	μA	at V <sub>R</sub> = 75 V
				50	μA	at V <sub>R</sub> = 20 V, T <sub>j</sub> = 150°C
<b>Reverse Breakdown Voltage tested with 100 μA Pulses</b>	V <sub>(BR)R</sub>	100			μA	
<b>Capacitance</b>	C <sub>tot</sub>			4.0	pF	V <sub>R</sub> = 0V, f = 1.0MHz
<b>Voltage Rise when Switching ON tested with 50 mA Forward Pulses</b>	V <sub>fr</sub>			2.5	V	t <sub>p</sub> = 0.1 s, Rise Time < 30 ns, f <sub>p</sub> = 5 to 100 KHz
<b>Reverse recovery time</b>	t <sub>rr</sub>			4	ns	at I <sub>F</sub> = 10 mA to I <sub>R</sub> = 1 mA, V <sub>R</sub> = 6 V, R <sub>L</sub> = 100 Ω
<b>Thermal Resistance Junction to Ambient Air *</b>	R <sub>thA</sub>			0.35	K/mW	
<b>Rectification Efficiency</b>	nV	0.45				at f = 100 MHz, V <sub>RF</sub> = 2 V

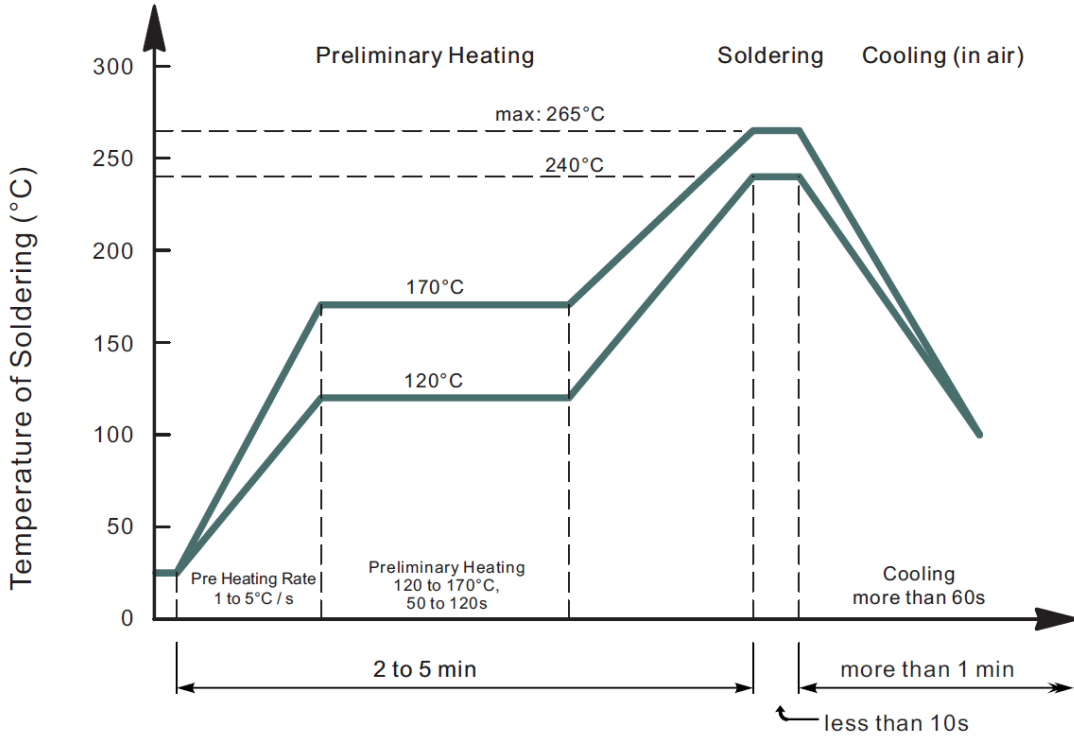
\* Note: Valid provided that electrodes are kept at ambient temperature.

**SMD FAST SWITCHING DIODES GLASS CASE LL34 SERIES**
**RELIABILITY**

Number	Experiment Items	Experiment Method And Conditions	Reference Documents
1	Solder Resistance Test	Test 260°C± 5°C for 10 ± 2 sec. Immerse body into solder 1/16" ± 1/32"	MIL-STD-750D METHOD-2031.2
2	Solderability Test	230°C ±5°C for 5 sec.	MIL-STD-750D METHOD-2026.1 0
3	Pull Test	1 kg in axial lead direction for 10 sec.	MIL-STD-750D METHOD-2036.4
4	Bend Test	0.5Kg Weight Applied To Each Lead, Bending Arcs 90 °C ± 5 °C For 3 Times	MIL-STD-750D METHOD-2036.4
5	High Temperature Reverse Bias Test	TA=100°C for 1000 Hours at VR=80% Rated VR	MIL-STD-750D METHOD-1038.4
6	Forward Operation Life Test	TA=25°C Rated Average Rectified Current	MIL-STD-750D METHOD-1027.3
7	Intermittent Operation Life Test	On state: 5 min with rated IRMS Power Off state: 5 min with Cool Forced Air. On and off for 1000 cycles.	MIL-STD-750D METHOD-1036.3
8	Pressure Cooker Test	15 PSIG, TA=121°C, 4 hours	MIL-S-19500 APPENOIXC
9	Temperature Cycling Test	-55°C~+125°C; 30 Minutes For Dwelled Time 5 minutes for transferred time. Total: 10 cycles.	MIL-STD-750D METHOD-1051.7
10	Thermal Shock Test	0°C for 5 minutes., 100°C for 5minutes, Total: 10 cycles	MIL-STD-750D METHOD-1056.7
11	Forward Surge Test	8.3ms Single Sale Sine-wave One Surge.	MIL-STD-750D METHOD-4066.4
12	Humidity Test	TA=65°C, RH=98% for 1000 hours.	MIL-STD-750D METHOD-1021.3
13	High Temperature Storage life Test	150°C for 1000 Hours	MIL-STD-750D METHOD-1031.5

**SMD FAST SWITCHING DIODES GLASS CASE LL34 SERIES**

**SUGGESTED REFLOW PROFILE (For Reference Only)**

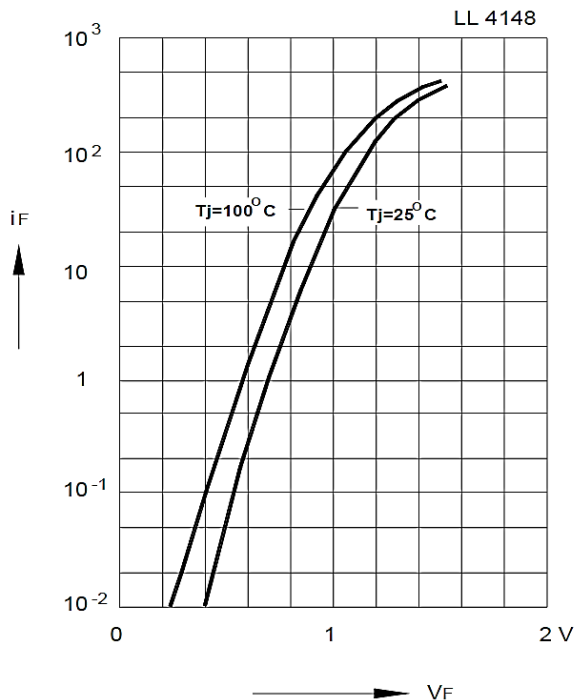


- Recommended peak temperature is over 245°C, If peak temperature is below 245 °C, you may adjust the following parameters; time length of peak temperature (longer), time length of soldering (longer), thickness of solder paste (thicker)
- Welding shall not exceed 2 times
- Remark: lead free solder paste (96.5 sn/3.0 Ag/0.5Cu)

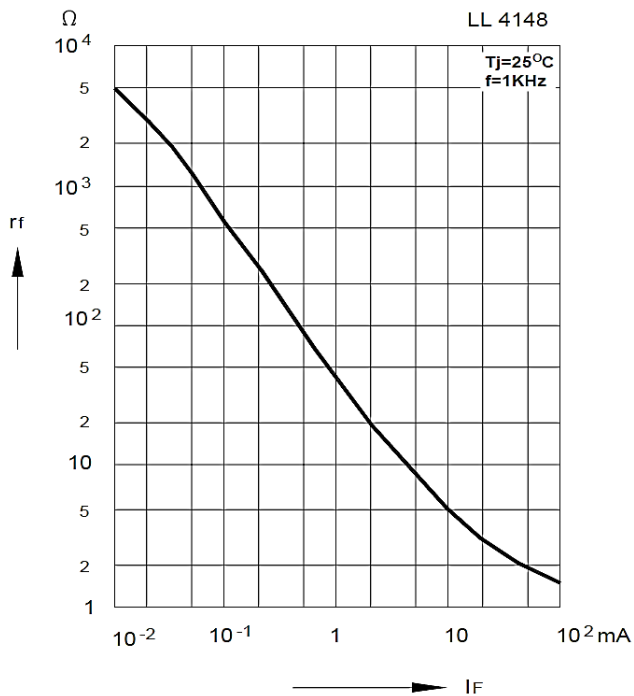
**SMD FAST SWITCHING DIODES GLASS CASE LL34 SERIES**

**RATINGS AND CHARACTERISTIC CURVES (For Reference Only)**

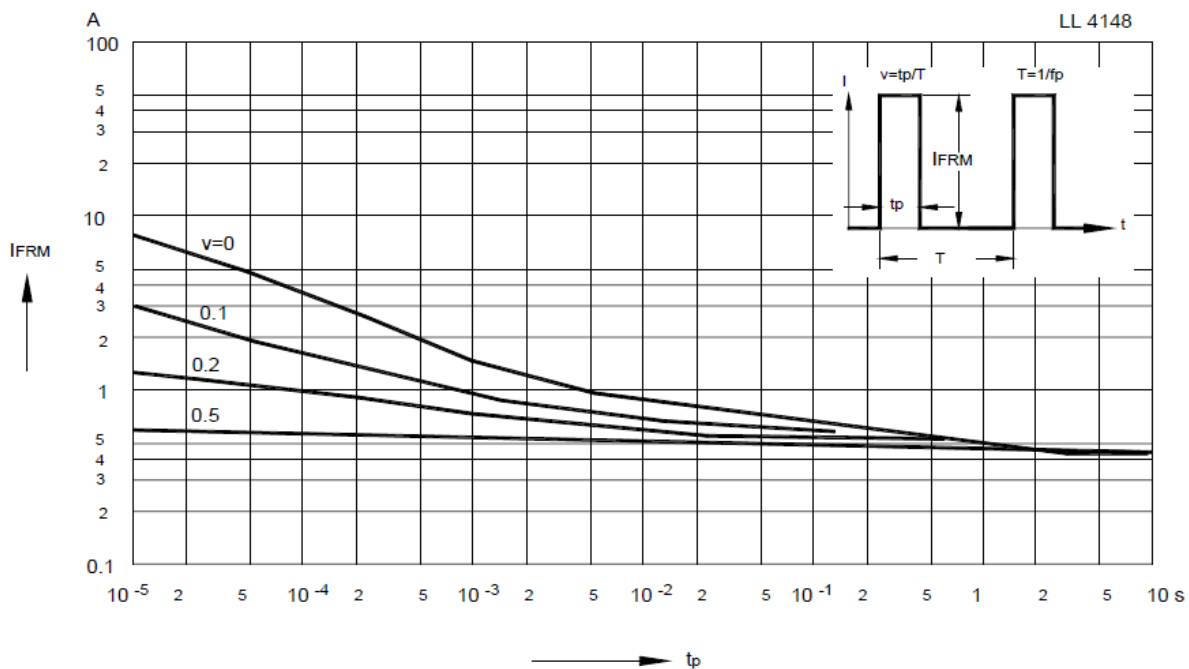
**Forward characteristics**



**Dynamic forward resistance versus forward current**



**Admissible repetitive peak forward current versus pulse duration**  
Valid provided that electrodes are kept at ambient temperature

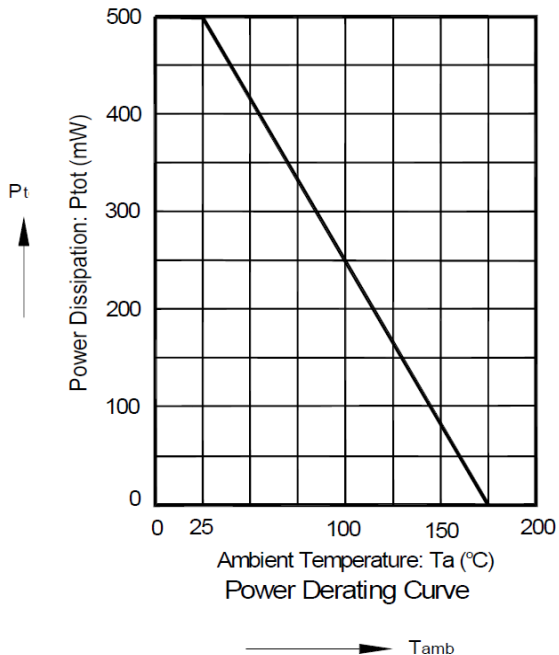




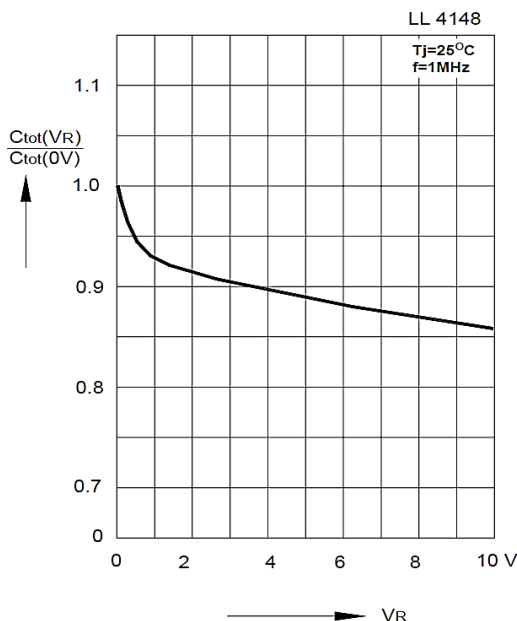
**SMD FAST SWITCHING DIODES GLASS CASE LL34 SERIES**

**RATINGS AND CHARACTERISTIC CURVES (For Reference Only)**

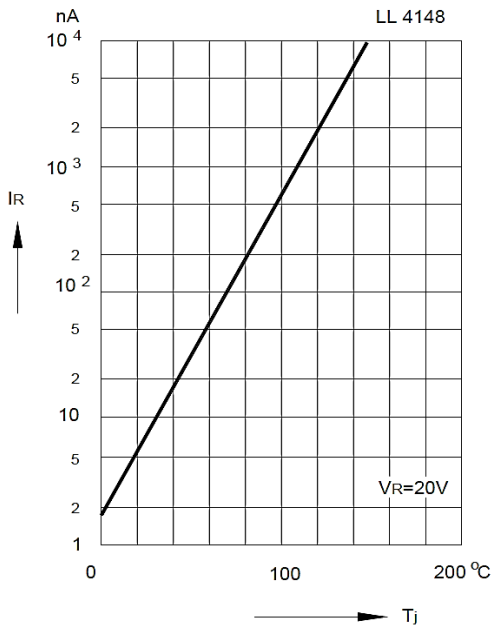
**Admissible power dissipation versus ambient temperature**  
Valid provided that electrodes are kept at ambient temperature



**Relative capacitance versus reverse voltage**



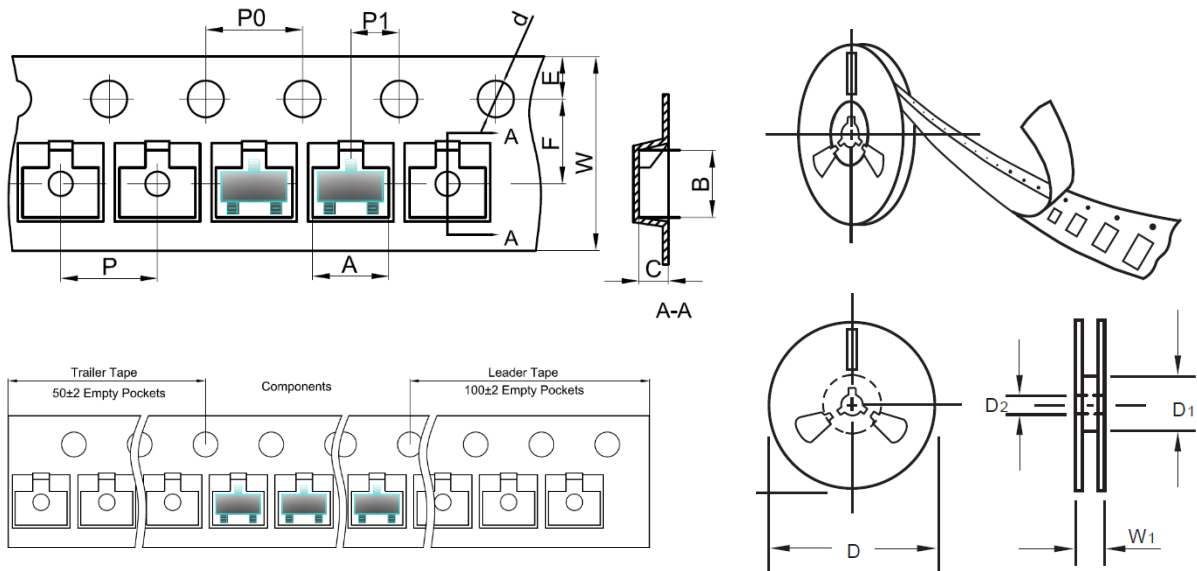
**Leakage current versus junction temperature**



**SMD FAST SWITCHING DIODES GLASS CASE LL34 SERIES**

**TAPE/REEL (Unit: mm)**

All Devices are packed in accordance with EIA standard RS-481-A and specifications.

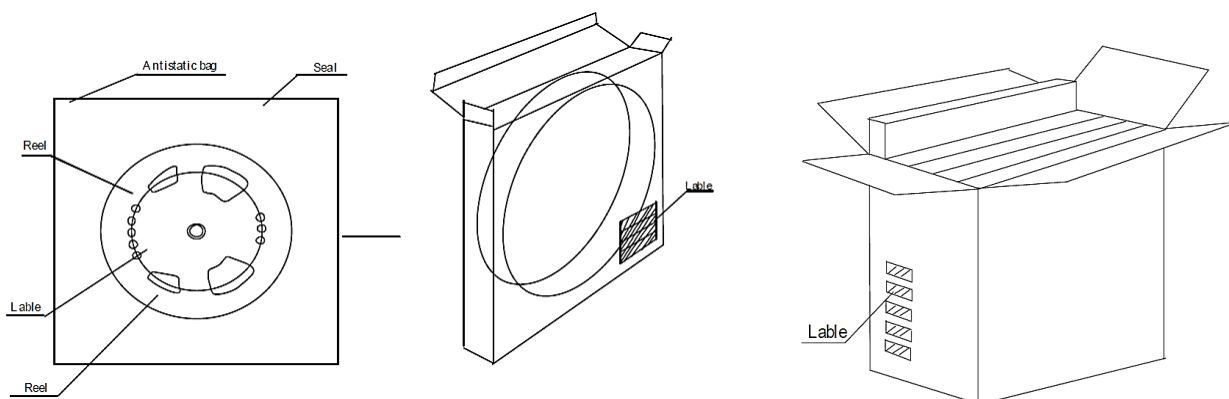


Item	Symbol	Tolerance	LL34
Carrier width	A	0.1	3.15
Carrier Length	B	0.1	2.77
Carrier Depth	C	0.1	1.22
Sprocket hole	d	0.05	1.55
13" Reel outside diameter	-	-	-
13" Reel inner diameter	-	-	-
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D1	Min.	54.4
Feed hole diameter	D2	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P0	0.1	4.00
Embossment center	P1	0.1	2.00
Overall tape thickness	T	0.1	0.25
Tape width	W	0.3	8.00
Reel width	W1	1.0	19.50

**SMD FAST SWITCHING DIODES GLASS CASE LL34 SERIES**

**PACKAGE**

Case Code	Reel Size	MPQ (pcs)	Component Spacing (mm)	Qty. Per Box (pcs)	Inner Box L*W*H (mm)	Reel Size (mm)	Carton size L*W*H (mm)	Qty. Per Carton (pcs)	G. W (kg)
LL34	7"	2,500		25,000	210*208*203	178	400*270*380	200,000	11.0



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